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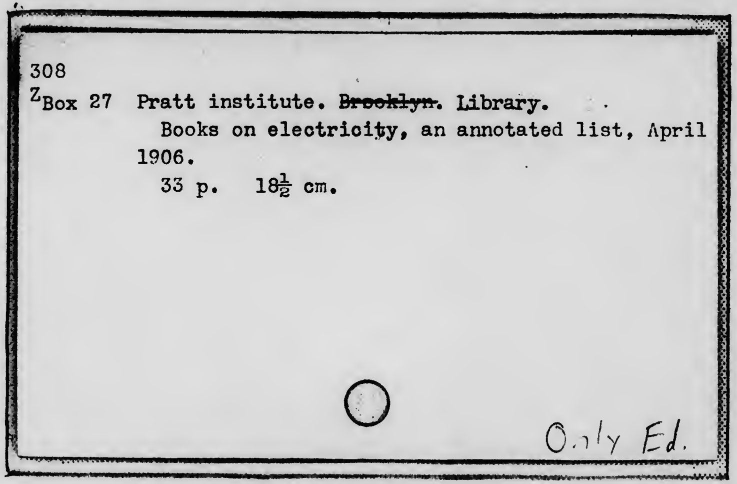

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Books on Electricity

An Annotated List

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Books on Electricity

An Annotated List

This list was prepared in 1905 by Mr. Herbert L. Cowing, then Head of the Applied Science Reference Department of the Pratt Institute Free Library. The annotations have been made, as far as possible, from the point of view of the student or user of books who is without special training in electricity. The subject of electrotherapeutics is not included.

The price of a technical book is almost always net, and in this list no attempt has been made to note the few exceptions to that rule.

ELECTRICITY.

General, Theoretical, and Popular Books.

Atkinson, Philip. Electricity for everybody; its nature and uses explained. Ed. 2. 1899. Century, $1.50 **621.3—A87E**

A reliable and well illustrated book for general reading. There is an interesting section on lighting and the aurora.

—— Elements of dynamic electricity and magnetism. Ed. 3. 1895. Van Nostrand, $2. **621.3—A87**

A non-mathematical introduction to the principles and apparatus involved in the production, measurement, and utilization of current electricity.

Benjamin, Park. The age of electricity. 1901. Scribner, $2. **621.3—B43**

A popular description and explanation of the uses of electricity, with historical notes on their development. Written in 1886, but still helpful.

—— History of electricity. 1898. Wiley, $3. **621.3—B43H**

The new edition of his Intellectual rise in electricity. A history of electrical knowledge from the earliest recorded observations of the properties of amber and the loadstone to the time of Franklin.

Brackett, C. F., and others. Electricity in daily life. 1891. Scribner, $3. **621.3—B72**

Readable chapters by well known men, describing the common uses of electricity. A book likely to stimulate interest and lead to further reading on recent developments.

Brennan, M. S. Popular exposition of electricity, with sketches of some of its discoverers. 1893. Appleton, 75c. **621.3—B75**

Written in a simple and interesting manner, but without illustrations of apparatus. The relations of noted investigators to the progress of electrical science are well brought out.

Child, C. T. How and why of electricity. Ed. 2. 1905. Electrical Review, $1. **621.3—C43**

Elementary information on electricity and many of its applications, simply and accurately presented.

Cumming, Linnæus. Electricity treated experimentally for the use of schools and students. Ed. 3. 1891. Longmans, $1.50 **621.3—C91**

A one year course of experimental lectures.

Faraday, Michael. Experimental researches in electricity. 3 v. 1839-1855. Scribner, $16. **621.3—F22**

A collection of the original papers in which his famous experiments were described. Partial contents:

v. 1. On induction; on the identity of electricity from different sources; on electrochemical decomposition.
v. 2. On the source of power in the voltaic cell.
v. 3. On the magnetization of light; on diamagnetism and other magnetic phenomena.

Ferguson, R. M. Electricity. New ed. rev. 1893. Chambers, London, 3s. 6d. **621.3—F38**

An outline of experimental facts and general principles, intended as a text-book, and also for general reading. The treatment is rather antiquated. Out of print.

Fleming, J. A. Short lectures to electrical artisans. Ed. 3. 1890. Spon, $1.05 **621.3—F62**

Some fundamental principles are clearly stated and illustrated by experiments. A useful introduction to more systematic and advanced works. Out of print.

Gerard, Eric. Electricity and magnetism. 1897. Electrical World, $2.50 **621.3—G31**

A rather advanced treatment of the subject, but without the abstruse mathematical analyses that characterise the standard treatises.

Gordon, J. E. H. Physical treatise on electricity and magnetism. Ed. 2, rev. and enl. 2 v. 1887. Appleton, $10. **621.3—G65**

Contains descriptions of the best laboratory methods and apparatus of that day, and outlines in some detail the methods and results of noted investigators. There are interesting chapters in vol. 2 on electrical discharges. Many fine illustrations. Out of print.

Guillemin, A. V. Electricity and magnetism. Rev. ed. 1891. Macmillan, $8. **621.3—G94**

A comprehensive illustrated work intended for general reading. Terrestrial magnetism and atmospheric electricity are treated at length. The latter half of the book, on "applications," is much out of date.

Hospitalier, E. Modern applications of electricity. Ed. 2. 2 v. 1883. Kegan Paul, 25s. **621.3—H79**

v. 1. The sources of electricity. Electric lighting.
v. 2. Telephone. Various applications. Electrical transmission of energy.

Of value to the student of early developments.

Houston, E. J. Electricity and magnetism; a series of advanced primers of electricity. 1893. Electrical World, $1. **621.3—H81**

A compact first book for general readers.

Iles, George. Flame, electricity and the camera. 1900. Doubleday, $2. **621.3—I 27F**

A very readable book, combining descriptions of the chief uses of fire, electricity, and photography, with a most interesting study of the influence of successive discoveries upon human progress.

—— Invention and discovery. 1902. (Little masterpieces of science.) Doubleday, 75c. **621.3—I 27**

Short, popular accounts of the work of Franklin, Faraday, Henry, Bell, Count Rumford, and George Stephenson, edited from well-known books on the several subjects. There are also chapters on the Atlantic cable, X-rays, and wireless telegraphy.

Jackson, J. P., and **Jackson,** D. C. Elementary book on electricity and magnetism and their applications. 1902. Macmillan, $1.40 **621.3—J12**

This is a reliable and agreeably written work intended chiefly as a text-book for high and manual training schools. It is, however, a description of the applications of electricity rather than a text-book of the principles of electricity as a branch of physics.

Jenkin, H. C. F. Electricity and magnetism. Ed. 8. 1885. Longmans, $1.25 **621.3—J41**

This is still a good presentation of the main facts and fundamental laws.

Lodge, Sir O. J. Modern views of electricity. Ed. 2. 1892. Macmillan, $2. **621.301—L8**

A popular explanation of the "ether" theory of electricity, by a leading authority. Mechanical illustrations are used throughout to aid the reader in gaining definite conceptions of the various phenomena. Dr. Lodge favors the two fluid constitution of the ether.

Mascart, Elenthére, and **Joubert,** J. Treatise on electricity and magnetism. 2 v. 1883-1888. Longmans, $3.50 **621.3—M37**

A standard advanced treatise. v. 1. General theory; v. 2. chiefly on measurements.

Maxwell, J. C. Elementary treatise on electricity. Ed. 2. 1888. Oxford Press, $1.90 **621.3—M45**

"Those phenomena which appear to throw light on the theory of electricity" are presented in compact form, and without the advanced methods used in his standard treatise.

—— Treatise on electricity and magnetism. 2 v. Ed. 2. 1881. Oxford Press, $8. **621.3—M45T**

A classic mathematical work. It includes his famous electromagnetic theory of light.

Meadowcroft, W. H. A B C of electricity. c1888. Excelsior, 50c. **621.3—M46**

A primary book devoted chiefly to very simple descriptions of the telegraph, telephone, electric light and batteries.

Mendenhall, T. C. Century of electricity. 1887. Houghton, $1.25. **621.3—M52**

An interesting popular sketch of the discoveries and inventions in electricity down to 1887.

Munro, John. Romance of electricity. 1893. Religious Tract Soc., London, 5s. **621.3—M92**

Deals chiefly with atmospheric electricity, and gives many facts and incidents from trustworthy sources. The chapter on electricity in living creatures covers a subject seldom touched upon in books.

Noad, H. M. Students' text-book of electricity. 1895. Van Nostrand, $4. **621.3—N66**

A reprint of the 1879 edition of a well known text-book.

St. John, T. M. Things a boy should know about electricity. Ed. 2. 1903. Author, 407 West 51st St., N. Y. City, $1. **621.3—S14**

The principles explained are kept in very close touch with everyday facts, and with commercial apparatus, of which there are many illustrations.

Shepardson, G. D. Electrical catechism. 1901. Electrical World, $2. **621.3—S54**

The best question and answer treatment of electricity yet published. The questions are of wide scope and practical bearing, and the answers clear and accurate. Well indexed.

Sloane, T. O'C. Arithmetic of electricity. 1897. Henley, $1. **621.3—S63**

Gives rules for solving by arithmetic the simpler problems met with in electrical work, and illustrates each case by an example fully worked out.

—— Electricity simplified. 1901. Henley, $1. **621.3—S63E**

A well condensed explanation of general principles and important phenomena.

Swoope, C. W. Lessons in practical electricity. 1901. Van Nostrand, $2. **621.3—S97**

A text-book suitable for evening classes and for home study.

Thompson, S. P. Elementary lessons in electricity and magnetism. New ed., rev. and enl. 1901. Macmillan, 4s. 6d. **621.3—T37**

A standard first book for general readers who wish to become acquainted with the principles of the subject in some detail.

Thomson, J. J. Electricity and matter. 1904. Scribner, $1.25 **621.301—T38**

Lectures delivered at Yale University in 1903. They give the results of recent investigations leading to the conception of minute corpuscles carrying a definite charge of electricity. The constitution of the atom is studied in the light of this theory and radioactivity is briefly discussed.

—— Elements of the mathematical theory of electricity and magnetism. Ed. 2. 1897. Macmillan, $2.60 **621.3—T38**

A work of high authority, which does not involve mathematics beyond differential calculus.

Trowbridge, John. What is electricity? 1896. Appleton, $1.50 **621.301—T7**

Intended not so much to give any definite answer to the question as to indicate the lines of investigation, and to enable the general reader to perceive the reasons which have led to belief in an ether and in the electro-magnetic theory of light.

Urbanitzky, A. R. von. Electricity in the service of man. 1886. Cassell, $3.60 **621.3—U72**

Of historical interest for the large number of cuts and descriptions of early forms of dynamos, electric lamps, telephones and other apparatus. Out of print.

Walker, S. F. Electricity in our homes and workshops. 1889. Van Nostrand, $2. **621.3—W15**

Deals in a practical manner with batteries, electric bells, electric mining signals, and telephone apparatus.

Dictionaries and Pocket-Books.

Foster, H. A. Electrical engineer's pocket-book. Ed. 3. 1904. Van Nostrand, $5. **621.309—F8**

Useful facts and formulae with tables and diagrams. Recent and complete.

Houston, E. J. Dictionary of electrical words, terms and phrases. Ed. 4. 1898. Electrical World, $7. **621.309—H8**

Standard. It contains encyclopedic matter, as well as the concise definitions.

Munro, John, and **Jamieson**, Andrew. Pocket-book of electrical rules and tables. Ed. 6, rev. and enl. 1889. Van Nostrand, $2.50 **621.309—M9**

A well-known handbook, containing much that is still helpful, though it necessarily lacks data on recent practice and modern apparatus.

Static and Atmospheric Electricity.

Anderson, Richard. Lightning conductors. Ed. 3, rev. and enl. 1885. Spon, $5. 621.302—A54

A comprehensive treatise on the subject as understood before Lodge's investigations discredited many of the accepted views. It includes long abstracts of the French official reports on lightning conductors, 1823-1868, and an exhaustive bibliography, 1519-1885.

Atkinson, Philip. Elements of static electricity. 1887. Van Nostrand, $1.50 621.302—A87

A popular explanation, illustrated by experiments. Includes atmospheric electricity.

Cavendish, Henry. Electrical researches, 1771-1781. 1879. Macmillan, $4.50 621.302—C3

Contains his papers entitled "An attempt to explain some of the principal phenomena of electricity by means of an elastic fluid," and "Some attempts to imitate the effects of the torpedo by electricity"; also much material from his journals and other unpublished papers, edited by Clerk Maxwell.

Gray, John. Electrical influence machines, their historical development and modern forms, with instructions for making them. Ed. 2, rev. and enl. 1903. Van Nostrand, $2. 621.302—G79

A thorough and lucid explanation of the principles and construction of the Holtz, Wimshurst and other electrostatic induction machines.

Kelvin, W. T., 1st baron. (Sir William Thomson.) Reprint of papers on electrostatics and magnetism. Ed. 2. 1884. Macmillan, $5. 621.302—K2

Profound mathematical papers that have become classic.

Lightning Rod Conference. Report [on a code of rules for erecting lightning rods.] 1882. 621.302—L6

The appendices to the report include official information from manufacturers on details of practice, abstracts of valuable papers of dates from 1784 to 1880, and a bibliography.

Lodge, Sir O. J. Lightning conductors and lightning guards. 1892. Macmillan, $4. 621.302—L8

A work of high authority, based on his experiments proving the importance of the momentum of electric discharges, and showing how his results alter previously accepted views as to form and material of lightning rods.

X-Rays.

Addyman, F. T. Practical X-ray work. 1901. Van Nostrand, $4. 621.304—A22

Written chiefly for medical practitioners. Pt. 1. Historical. Pt. 2. Apparatus and its management (giving special attention to induction coils and focus tubes.) Pt. 3. Practical work.

Barker, G. F., editor. Röntgen rays. 1899. Amer. Book Co., 60c. 621.304—B2

Original papers by Röntgen, Stokes and J. J. Thomson. Bibliography.

Meadowcroft, W. H. A B C of the X-rays. c1896. Excelsior, 75c. 621.304—M4

A good popular description, including practical details about the apparatus, to assist those who wish to experiment.

Morton, W. J. X-ray . . . and its value in surgery. 1896. Amer. Tech. Book Co., 75c. 621.304—M8

A popular explanation written while the application of the X-ray to surgery was in the experimental stage. Some good radiographs are given.

Thompson, E. P. Roentgen rays; phenomena of the anode and cathode. c1896. Van Nostrand, $1.50 621.304—T37

Consists chiefly of abstracts of the experiments of original investigators, with references to sources. Illustrated.

Thomson, J. J. Conduction of electricity through gases. 1903. Macmillan, $4. 621.304—T48

Gives in detail the experimental evidence that points to the theory of "charged ions" and shows how satisfactorily the theory explains observed phenomena. Röntgen and Becquerel rays are among the subjects discussed.

Magnetism and Induction.

Ewing, J. A. Magnetic induction in iron and other metals. Ed. 3, rev. 1900. Van Nostrand, $4. 621.305—E95

Standard. Includes an interesting chapter on the molecular theory of magnetism. Valuable tables and diagrams.

Gilbert, William. On the loadstone and magnetic bodies, and on the great magnet, the earth. 1893. Wiley, $2.50 621.305—G3

A translation of his famous "De Magnete," which was published in 1600 and marks the beginning of the scientific study of magnetism.

Harris, Sir W. S. Rudimentary magnetism. Ed. 3, rev. and enl. 1875. Lockwood, $1. 621.305—H2

A well-known book published in 1852; reprinted in 1875 with some additions. Now out of print.

Houston, E. J., and **Kennelly,** A. E. Magnetism. 1896. Electrical World, $1. 621.305—H8

A good introduction to the subject for general readers and elementary students. It includes electro-magnetism and its uses, and terrestrial magnetism.

Lewis, E. P., editor. Effects of a magnetic field on radiation. c1900. American Book Co., 75c. 621.305—L5

Original papers by Faraday, Kerr and Zeeman. Bibliography.

Lloyd, Humphrey. Treatise on magnetism, general and terrestrial. 1874. Longmans, $3.75 621.305—L7

The book includes many tabulated data on variations of the earth's magnetism. Out of print.

Mansfield, A. N. Electromagnets, their design and construction. 1901. Van Nostrand, 50c. 621.305—M31

The essentials of the subject are clearly presented in this little volume.

Thompson, S. P. Lectures on the electro-magnet. 1891. Electrical World, $1. 621.305—T3

The principles of the magnetic circuit are carefully explained, and practical formulae and directions for designers are given.

Tyndall, John. Researches on diamagnetism and magne-crystallic action. 1888. Appleton, $1.50 621.305—T9

The results of his own extended and carefully conducted experiments, with a general discussion of the subject.

Ames, J. S., editor. Discovery of induced electric currents. 2 v. c1900. American Book Co., 75c. each. 621.306—A51

v. 1. Contains the original papers of Joseph Henry on the subject.
v. 2. Contains those of Faraday.

Gordon, J. E. H. Four lectures on static electric induction. 1881. Van Nostrand, 50c. 621.306—G6

Delivered at the Royal Institution in 1879. Illustrated by experiments. Out of print.

Hertz, H. R. Electric waves. 1893. Macmillan, $2.50 621.306—H4

A record of his brilliant researches establishing experimentally that electric action is propagated through space with the velocity of light, confirming Maxwell's mathematical results.

Electric Engineering.

American Institute of Electrical Engineers. New York electrical handbook. 1904. McGraw, $1. K621.31—A51

A guide for the foreign delegates to the Electrical Congress at St. Louis, containing reliable information about the telephone, telegraph, electric lighting and railway systems of Greater New York.

Beaumont, W. W., and others. Practical electrical engineering. 2 v. 1892. Biggs, London, $7.50 621.31—B3

The several divisions of this work (including steam equipment for central stations) were contributed by well-known men and contained much data of value when published, with excellent cuts. The section in vol. 2 on incandescent lamps is detailed and interesting historically. Out of print.

Carter, E. T. Motive power and gearing for electrical machinery. Pref. 1896. Van Nostrand, $5. 621.31—C2

A comprehensive treatise on the mechanical equipment of electric power houses.

Cleveland Armature Works. Practical electricity, with questions and answers, ed. by Lincoln. 1900. Cleveland Armature Works, $2. 621.31—C5

"Written to assist those who have some practical knowledge of electricity and wish to learn more of the way in which wiring is calculated and of the simpler and more important parts of dynamo-electric machine design." Glossary of terms.

Hawkins, Nehemiah. New catechism of electricity. c1896. Audel, N. Y., $2. 621.31—H3

A plain and practical handbook on the care of electric plants and apparatus. Alternating current apparatus receives little attention. This book is not written in the form of questions and answers.

Houston, E. J., and **Kennelly**, A. E. Electrical engineering leaflets. 3 v. 1895. Electrical World, $1.50 each.
Elementary grade. 621.31—H8E1
Intermediate grade. 621.31—H8E
Advanced grade. 621.31—H8

They set forth concisely and accurately the fundamental principles of electricity as applied to engineering. The chapter headings are the same in all three grades.

International Correspondence Schools. [Electric engineering.] 4 v. c1902. (International library of technology, v. 11-14.) Internat. Text-Book Co., Scranton, $5 each. K621.31—I 61

The material of their regular text-books revised and arranged for reference use. Very practical and plainly written, with excellent diagrams.

v. 1. Electricity and magnetism, electric measurements, batteries, theory of the dynamo.
v. 2. Dynamo design, motor design, alternating current machinery.
v. 3. Electric transmission, electric lighting, interior wiring.
v. 4. Operation of dynamos and motors, electric railways.

International Electrical Congress, Chicago, 1893. Proceedings, Aug. 21-25, 1893. 1894. Amer. Inst. of Electrical Engineers, $2. 621.31—I 611

These thirty papers cover authoritatively a wide range of subjects prominent at that date.

International Electrical Congress, St. Louis, 1904. Transactions. 3 v. 1905. McGraw, $10. K621.31—I 611T

159 papers of the highest authority, together forming a compendium of the present state of electrical knowledge and of electrical engineering practice. Contents:

v. 1. General theory—mathematical and experimental; general applications.
v. 2. Electrochemistry; electric power transmission; electric light and distribution.
v. 3. Electric transportation; electric communication; electro-therapeutics.

Maycock, W. P. Electric lighting and power distribution. 2 v. v. 1, ed. 5, 1902. v. 2, 1903. Macmillan, v. 1, $1.75; v. 2, $2. 621.31—M4

An elementary text-book of electric engineering for English students.

National School of Electricity. Electricity and magnetism. Ed. 2. 1895. National School of Electricity, $2. 621.31—N2

A series of instruction papers adapted to students who wish to acquire quickly a working knowledge of electricity and its applications.

Siemens, E. W. von. Scientific and technical papers. 2 v. 1892-1895. Murray, 14s. 621.31—S57

They relate chiefly to electrical subjects, and originally appeared in various journals from 1845 to 1890. v. 1. Scientific papers; v. 2. Technical papers, many of which are short illustrated descriptions of new electrical apparatus.

Sloane, T. O'C. Electricians' handy book, a modern work of reference; a compendium of useful data, covering the field of electrical engineering. 1905. Henley, $3.50 K621.31—S63E

Written for the untrained worker.

—— How to become a successful electrician. Ed. 12. 1903. Henley, $1. 621.31—S63

Advice as to preparatory studies and methods of work, with notes on the opportunities and requirements of several branches of the profession.

Steinmetz, C. P. Theoretical elements of electrical engineering. Ed. 2, rev. 1902. Electrical World, $2.50 621.31—S82

Pt. 1. General theory of both continuous and alternating currents.
Pt. 2. Characteristic features of special apparatus — synchronous machines, commutating machines, synchronous converters, induction machines. Nearly free from calculus.

U. S.—Lieutenant-general of the Army. Handbook for the use of electricians in the operation and care of electrical machinery and apparatus of the U. S. seacoast defenses. 1902. K621.31—U58

Condensed instructions of the most practical character. Many of them will be found equally helpful by electricians in general practice. The section on searchlight projectors contains information not easily found elsewhere.

Dynamo-Electric Machinery.

Bottone, S. R. The dynamo. Ed. 12. 1903. Macmillan, 90c. 621.311—B6

Detailed instructions for the amateur on the construction of small dynamos. Short sections dealing with alternators have been added to this edition.

—— and **Beale,** A. M. A. Electro-motors. c1891. Van Nostrand, 75c. J621.311—B6E

For the amateur.

Crocker, F. B., and **Wheeler,** S. S. Practical management of dynamos and motors. Ed. 5, rev. and enl. 1896. Van Nostrand, $1. 621.311—C8

Tells how to install, connect and operate them and how to detect and remedy various troubles. One section treats of the peculiarities of arc light machines.

Hanchett, G. T. Modern electric railway motors. c1900. Street R. R. Pub. Co., $2. 621.311—H1

A practical discussion of details of construction and methods of maintenance and repair, fully illustrated. There is a table of the principal dimensions of standard motors.

Hawkins, C. C., and **Wallis,** F. The dynamo. Ed. 3, rev. and enl. 1903. Macmillan, $3. 621.311—H3A

Rather a text-book than a designer's manual. This edition is much enlarged and contains many fine cuts. Especially valuable are the sections on armature shafts, formed armature coils, field magnets and field ampere terms, armature reaction in alternators.

Hering, Carl. Practical directions for winding magnets for dynamos. 1887. Spon, 70c. 621.311—H4P

This is still useful, but is out of print.

—— Principles of dynamo-electric machines and practical directions for designing and constructing dynamos. 1890. Johnston, N. Y., $2.50 621.311—H4

Still helpful to the student and advanced amateur. Out of print.

Hobart, H. M. Electric motors; continuous current motors and induction motors. 1904. Macmillan, $5. K621.311—H6

Intended for practical designers. It contains much detailed data from recent machines of standard makers (chiefly English and continental). Data are given in metric units.

Houston, E. J., and **Kennelly,** A. E. The electric motor and the transmission of power. 1896. Electrical World, $1. 621.311—H8

The theory and structure of the motor are explained for those who have no special knowledge of electricity. The use of motors on street railway cars is not included.

Martin, T. C., and **Wetzler,** Joseph. The electric motor and its applications. Ed. 2, enl. 1888. Electrical World, $3. 621.311—M3

A short account of early experimental types is followed by a detailed and fully illustrated description of practical developments up to 1888, including much on electric traction.

Parshall, H. F., and **Hobart**, H. M. Armature windings of electric machines. 1895. Van Nostrand, $7.50
621.311—P2A

There are 129 full page diagrams of windings for both continuous and alternating current machinery, with short descriptions, and a series of winding tables.

—— Electric generators. 1900. Wiley, $10. K621.311—P2

The methods are those of the experienced designer of commercial machinery, and the book contains a large amount of detailed data from practice.

The contents cover the properties and testing of materials, methods of design, and details concerning selected machines. There is a valuable section on rotary converters.

Prescott, G. B. Dynamo-electricity. 1888. Appleton, $5.
621.311—P9

Includes a very full record of the early development of the electric light and of the dynamo.

Ryan, H. J., **Norris**, H. H., and **Hoxie**, G. L. Text-book of electrical machinery. v. 1. 1904. Wiley, $2.50
621.311—R9

v. 1. Electric, magnetic, and electro-static circuits.

The treatment is based on the laws of alternating currents, which are here clearly and concisely presented in a form adapted to the needs of advanced courses in electrical engineering.

v. 2. Not yet published.

Thompson, S. P. Design of dynamos. 1903. Spon, $3.50
621.311—T3D

Limited to continuous current generators. Contains valuable data and cuts relating to standard American and foreign types.

The substance of this book has been incorporated in the 7th ed. of his Dynamo-electric machinery.

—— Dynamo-electric machinery. 2 v. Ed. 7. 1904-1905. Spon, $15. K621.311—T3B

This latest edition of what has long been a standard work for engineers, combining history, theory, and practice, is so thoroughly revised as to be almost a new book. There are 54 folding plates of standard machines.

Walker, F. W. Practical dynamo-building for amateurs; how to wind for any output. Ed. 2, rev. n. d. Van Nostrand, 50c. 621.311—W1

Wilkes, Gilbert. Some practical hints in dynamo design. 1894. 25c. 621.311—W6

Bound with Abbott, A. V., Evolution of a switchboard. 35c.

Wilkes' paper deals briefly with those questions that are of general application, such as mechanical stability, economy of manufacture, prevention of sparking, etc.

Abbott's paper describes the chief changes in telephone switchboard practice up to 1894.

These are Wisconsin Univ. Bulletins, Engineering series, v. 1, No. 2 and 4.

Alternating Current Machinery.

Bedell, Frederick, and **Crehore**, A. C. Alternating currents; an analytical and graphical treatment for students and engineers. Ed. 2. 1893. Electrical World, $2.50 621.315—B3

An able mathematical analysis of circuits containing resistance, self induction and capacity, variously combined. Calculus is freely used. Alternating current machinery is not discussed.

Behrend, B. A. Induction motor. 1901. McGraw, $1.50
621.315—B39

A compact mathematical treatise for designers and advanced students. Graphical methods are freely used. Some experimental data are given.

Blakesley, T. H. Papers on alternating currents of electricity. Ed. 2, enl. 1889. Van Nostrand, $1.50
621.315—B5

Mathematical papers for advanced students.

Boy de la Tour, Henri. Induction motor; its theory and design. 1903. McGraw, $2.50 621.315—B7

Detailed theoretical treatment, in which graphical methods largely form the basis for the mathematical deductions.

Esty, William. Alternating current machinery. 1905. American School of Correspondence at Armour Institute of Technology, $3.75 K621.315—E82

Written for the beginner. Full illustrations. Treatment condensed but usually clear, and mathematics little used.

Franklin, W. S., and **Williamson**, R. B. Elements of alternating currents. Ed. 2. 1904. Macmillan, $2.50
621.315—F8

An excellent treatise, for advanced students, on the theory of the alternator, transformer, induction motor, rotary converter, and other alternating current apparatus. Supplemented by chapters descriptive of standard types of machinery.

Hanchett, G. T. Alternating currents. 1904. Wiley, $1.
621.315—H1

A simple and reliable explanation of alternating current phenomena and apparatus, intended especially for practical men who are familiar with continuous current work and wish to acquaint themselves with this other branch of electrical engineering.

Hospitalier, E. Polyphased alternating currents. 1893. Van Nostrand, $1.40 621.315—H7

A clearly written monograph on triphased and diphased currents.

Houston, E. J., and **Kennelly**, A. E. Alternating electric currents. 1899. Electrical World, $1. 621.315—H8

Explains very clearly as much of this difficult subject as may be understood without mathematics or special knowledge of electricity.

Jackson, D. C., and **Jackson**, J. P. Alternating currents and alternating current machinery. 1898. Macmillan, $3.50 621.315—J1

A well known text-book. The treatment is not so closely in touch with engineering realities as is that of Franklin and Williamson.

Martin, T. C. Inventions, researches and writings of Nikola Tesla, with special reference to his work in polyphase currents and high potential lighting. 1894. Electrical Engineer, $4. 621.315—M36

An interesting record and interpretation. Out of print.

Oudin, M. A. Standard polyphase apparatus and systems. Ed. 2, rev. 1900. Van Nostrand, $3. K621.315—O93

"On the characteristics and uses of the various types of apparatus, and on tne actual working of the several systems sanctioned by practice."

Sheldon, Samuel, and **Mason**, Hobart. Alternating current machinery. 1903. Van Nostrand, $2.50 K621.315—S54

A text-book on their theory, construction and operation; adapted to the less advanced courses in electrical engineering, though some calculus is used. The subject matter is well chosen and treated in a practical way.

Steinmetz, C. P., and **Berg**, E. J. Theory and calculation of alternating current phenomena. Ed. 3, rev. and enl. 1900. McGraw, $4. 621.315—S82A

A standard work, in which theory is kept in close touch with engineering facts. The treatment is advanced, though nearly free from calculus.

Tesla, Nikola. Experiments with alternate currents of high potential and high frequency. 1892. Electrical World, $1. 621.315—T28

Reprint of a well-known lecture delivered before the Institution of Electrical Engineers. The style is adapted to popular reading.

Thompson, S. P. Polyphase electric currents and alternate current motors. Ed. 2, enl. 1900. Spon, $5. K621.315—T3A

A standard work for technical students and engineers. Many illustrations, including colored diagrams of armature windings. Much enlarged over the first edition.

Continuous Current Machinery.

Houston, E. J., and **Kennelly**, A. E. Electro-dynamic machinery for continuous currents. 1896. Electrical World, $2.50 621.312—H8

One of the best of the more elementary works on the subject for students. Only simple mathematics are used, but the book is not superficial.

Sheldon, Samuel, and **Mason**, Hobart. Dynamo electric machinery: direct current machines. Ed. 4, rev. 1903. Van Nostrand, $2.50 621.312—S54

A clearly written and reliable text-book, giving a very practical treatment of the subject.

Wiener, A. E. Practical calculation of dynamo-electric machines; continuous current machinery. Ed. 2, rev. and enl. 1902. Electrical World, $3. 621.312—W63

Complete both as to methods of design and data from commercial practice, including standard foreign types.

Wilson, C. A. Carus. Electro-dynamics; the direct current motor. 1898. Longmans, $1.75 621.312—W74

A very practical study of the forces acting in a motor and how to determine their numerical relations, illustrated by examples and by curves showing the results of tests.

BATTERIES.

Bottone, S. R. Galvanic batteries. 1902. Macmillan, $1.50 621.33—B6

Includes descriptions of most of the cells now in use, both primary and secondary.

Carhart, H. S. Primary batteries. 1901. Allyn, $1.50 621.33—C1

A well-known work treating concisely both the theoretical and practical aspects of the subject. There is a chapter on battery tests.

Cooper, W. R. Primary batteries. Pref. 1901. Van Nostrand, $4. 621.33—C7

Describes the more important types and points out their merits and faults. Discharge curves are often given. There are good chapters on the theory of the voltaic cell and on standard cells.

Dolezalek, F. Theory of the lead accumulator. 1904. Wiley, $2.50 621.33—D6

A scientific study of the application of the newer theories of physical chemistry to the action of the storage battery.

Gladstone, J. H., and **Tribe**, Alfred. Chemistry of the secondary batteries of Planté and Faure. 1883. Macmillan, 2s. 6d. 621.33—G4

A brief record of some experimental investigations. Out of print.

Lyndon, Lamar. Storage battery engineering. Ed. 2, rev. 1903. McGraw, $3. 621.33—L9

An important work, written from the practicing engineer's standpoint.

Pt. 1. The lead storage battery.
Pt. 2 Auxiliary apparatus, systems, applications.

Marshall, Percival, editor. Small accumulators, how made and used. 1899. Spon, 50c. 621.33—M3

For the amateur.

Ohm, G. S. Galvanic circuit investigated mathematically. 1891. Van Nostrand, 50c. 621.33—O38

A translation of the classic work in which he established "Ohm's Law," published in 1827.

Treadwell, Augustus. Storage battery . . . construction, theory and use. 1900. Macmillan, $1.75 621.33—T7

A special feature of this book is the very large number of batteries whose distinguishing characteristics are described. References are given to American and foreign patents.

TRANSFORMERS AND INDUCTION COILS.

Allsop, F. C. Induction coils and coil-making. Ed. 3. 1899. Spon, $1.25 621.32—A44

Includes shock, medical and spark coils, with a short chapter on X-rays.

Baum, F. G. Alternating current transformer. 1903. McGraw, $1.50 621.32—B33

Based on a course of lectures to University students. Besides general theory and design there are chapters on regulation, efficiency, testing, circuit regulators, connections, and commercial types.

Bedell, Frederick. Principles of the transformer. 1896. Macmillan, $3.25 621.32—B41

A full and logical exposition of the theory involved, using both graphical and purely analytical methods. There are also chapters on Design and Construction and on Testing.

Fleming, J. A. Alternate current transformer in theory and practice. 2 v. 1889-1892. Van Nostrand, $5. each. 621.32—F6

A standard work. v. 1. Induction of electric currents; v. 2. Utilization of induced currents.

Schneider, N. H. (Norrie, H. S.) Induction coils. Ed. 2, rev. and enl. 1901. Spon, $1. 621.32—S35

Tells how to make and use coils for various purposes, including medical work, X-rays, and wireless telegraphy, and describes some experiments.

MEASUREMENTS AND TESTING.

Anthony, W. A. Lecture notes on the theory of electrical measurements. 1898. Wiley, $1. 621.34—A62

Only the essential data and methods of reasoning are given with each topic. Suggestive to teachers of the subject, but not a textbook complete in itself for students.

Ayrton, W. E. Practical electricity, completely rewritten. 1903. Cassell, $2. 621.34—A98A

A well-known work, especially useful in connection with lecture experiments and physical laboratory measurements.

Carhart, H. S., and **Patterson,** G. W. Electrical measurements. 1900. Allyn, $2. 621.34—C2

A laboratory manual of general methods for college students. Their adaptation to cable testing, dynamo testing and other technical work is not included.

Day, R. E. Exercises in electrical and magnetic measurement. Ed. 6. 1893. Longmans, $1. 621.34—D3

Examples with answers.

Fleming, J. A. Handbook for the electric laboratory and testing room. 2 v. 1901-1903. Van Nostrand, $5. each. 621.34—F6

Written for the electrical engineer rather than the physicist. Bibliography with each subject.
v. 1. Laboratory equipment; measurement of resistance, current, electromotive force, power.
v. 2. Measurement of quantity and energy, capacity and inductance; photometry; magnetic and iron testing; dynamo, motor and transformer testing.

Gray, Andrew. Absolute measurements in electricity and magnetism. Ed. 2. 1893. Macmillan, $1.25 621.34—G7

A revised edition of the small work, published in 1884, from which his standard treatise on the same subject developed. It is simpler and less theoretical in treatment than the larger work. There is a valuable chapter on standard measuring instruments and their graduation.

—— Theory and practice of absolute measurements in electricity and magnetism. 3 v. in 2. 1888. Macmillan, v. 1, $3.25; v. 2, $6.25 621.34—G7T

Standard for this class of measurements.

Kempe, H. R. Handbook of electrical testing. Ed. 6. 1900. Spon, $6. 621.34—K3

A standard work, particularly adapted to telegraph work and cable testing. Contains a long chapter on the Wheatstone bridge.

Nichols, E. L. The galvanometer. 1894. Spon, (paper), $1. 621.34—N51

Gives the most important features of the theory of these instruments, with notes on their construction, the measurements for which they are employed, and the precautions necessary in using them, with special reference to very sensitive galvanometers.

Parker, H. C. Systematic treatise on electrical measurements. 1897. Spon, $1. 621.34—P22

Many methods of measurement are here carefully classified and briefly described, and the most important for various purposes are indicated.

Parr, G. D. A. Electrical engineering measuring instruments for commercial and laboratory purposes. 1903. Van Nostrand, $3.50 621.34—P25

Well illustrated information on the principles and construction of ammeters, voltmeters and wattmeters in common use. Instruments for determining resistance and the magnetic properties of iron are not included.

—— Practical electrical testing in physics and engineering . . . for first and second year students. 1901. Longmans, $2.50 621.34—P25P

A course for the physical laboratory. Does not include testing of dynamos and other engineering apparatus.

Price, W. A. Treatise on the measurement of electrical resistance. 1894. Oxford Press, $3.50 621.34—P9

Much space is given to methods of constructing resistance coils and testing instruments. There are mathematical appendices on the theory of certain methods and apparatus.

Reed, L. C. American meter practice. 1903. McGraw, $2. 621.34—R2

Various wattmeters are described and principles of selection, methods of testing, and business features are discussed. There is a chapter on photometry and one on how to read meters.

Sever, G. F., and **Townsend**, Fitzhugh. Laboratory and factory tests in electrical engineering. 1904. Van Nostrand, $2.50 621.34—S49

Based on the laboratory course at Columbia. Considerable space is given to alternating current tests.

Swenson, B. V., and **Frankenfield**, Budd. Testing of electromagnetic machinery and other apparatus. v. 1. 1904. Macmillan, $3. 621.34—S97

v. 1. Direct currents.
Intended as a college laboratory manual and as a reference work for engineers. The treatment of each experiment is self-contained to facilitate reference use. Knowledge of general theory is presupposed. There is a list of books and specific references are given with most of the experiments.
v. 2. Not yet published.

Webb, H. L. Practical guide to the testing of insulated wires and cables. Ed. 5. 1902. Van Nostrand, $1. 621.34—W3

A description of an ordinary "testing set" and how to use it. Reprint of 1891 edition.

POWER TRANSMISSION, CONDUCTORS, WIRING, ETC.

Abbott, A. V. Electrical transmission of energy. Ed. 4, rev. and enl. 1904. Van Nostrand, $5. 621.35—A13

Full and practical treatment of conductors and the design and construction of circuits. Central station machinery is not discussed. There are valuable diagrams and tables.

American Institute of Electrical Engineers—Committee on high tension transmission. High tension power transmission. 1905. McGraw, $3. 621.35—A51

An important book containing the record of special discussions of this subject at the Institute as well as other material gathered by the committee.

Atkinson, Philip. Power transmitted by electricity. Ed. 2, rev. and enl. 1899. Van Nostrand, $2. 621.35—A87

The motor and its applications to stationary uses and to electric railways, explained for general readers.

Bell, Louis. Electric power transmission. Ed. 4, rev. and enl. 1906. McGraw, $4. K621.35—B4A1

An excellent comprehensive work, covering the theoretical, practical and commercial aspects of the subject, with a chapter on high voltage transmission.

Bowker, W. R. Dynamo, motor and switchboard circuits. 1904. Van Nostrand. $2.25 K621.352—B6

Diagrams and explanations of typical connections used in continuous and alternating current work.

Cushing, H. C. Standard wiring for electric light and power. Ed. 10. 1904. H. C. Cushing, N. Y., $1. K621.352—C9A

A guide to the methods of wiring and types of apparatus approved by insurance inspectors. Based on the National Code of Rules and revised yearly.

Horstmann, H. C., and **Tousley**, V. H. Modern electrical construction. 1905. Drake, $1.50 621.31—H78

A complete and very practical handbook for electricians, showing how all classes of electrical apparatus should be installed and wired to conform to the underwriters' rules.

—— Modern wiring diagrams and descriptions. 1904. Drake, $1.50 621.352—H7

176 diagrams of the circuits commonly used in electrical work, with short explanations and terse practical comments.

Kapp, Gisbert. Electric transmission of energy. Ed. 4, rev. 1894. Van Nostrand, $3.50 621.35—K1

A standard theoretical work for students and engineers. It contains very little historical or purely descriptive matter.

Noll, Augustus. How to wire buildings. Ed. 2. 1894. Amer. Industrial Pub. Co., $1.50 621.352—N7

The instructions and cautions contained in this book are the result of experience, and many of them are still applicable.

Perrine, F. A. C. Conductors for electrical distribution; their materials and manufacture, the calculation of circuits, pole-line construction, underground working, and other uses. 1903. Van Nostrand, $3.50 621.352—P4

Complete, reliable, and rich in facts and data from practice.

Robb, Russell. Electric wiring, for the use of architects, underwriters and the owners of buildings. 1896. Macmillan, $2.50 621.352—R5

Contains a clear explanation of each section of the National Code of Rules for those without technical knowledge.

Turner, H. W., and **Hobart,** H. M. Insulation of electric machines. 1905. Whittaker, $4.50 K621.352—T85

The most important and comprehensive treatise on insulating materials yet published, though the insulation of cables is excluded. The bibliography includes a list of references on losses in dielectrics.

Wittbecker, W. A. Domestic electrical work. 1902. Williams, 50c. 621.352—W7

Concise directions for wiring buildings for bells, alarms, annunciators, and for gas lighting from batteries.

Lupton, Arnold, and others. Electricity as applied to mining. 1903. Van Nostrand, $3.50 621.355—L9

Written for mining engineers and managers. It describes typical forms of electrical apparatus used in mines and gives a working knowledge of their principles and methods of installation.

ELECTRIC RAILWAYS.

Ashe, S. W., and **Keiley,** J. D. Electric railways. 1905. Van Nostrand, $2.50 621.36—A82

Treats of the rolling stock equipment in detail, but does not touch upon central stations or distributing circuits. There are important chapters on Analysis of train performance, Types of control, and Brakes; also a short section on electric locomotives.

Bell, Louis. Power distribution for electric railroads. Ed. 3, rev. and enl. c1900. Street R. R. Pub. Co., $2.50 621.36—B4

CONTENTS: Fundamental principles; return circuit; direct feeding systems; special methods of distribution; substations; transmission of power for substations; alternating motors for railway work; interurban and cross country work; fast and heavy railway service.

Crosby, O. T., and **Bell,** Louis. Electric railway in theory and practice. 1892. Johnston, N. Y., $2.50 621.36—C8

This was one of the first books to treat the subject from the engineering and commercial standpoint as distinguished from the historical and descriptive. Out of print.

Dawson, Philip. Electric railways and tramways. Rev. and enl. ed. 1897. Wiley, $12.50 K621.36—D3

A comprehensive work, embodying a large amount of descriptive and statistical matter on American and foreign railway practice. Contains an appendix on English railway legislation and a partial bibliography.

Gayetty, J. W. Motorman's guide. 1898. Laird, 50c. 621.36—G2

Instructions on operating electric cars and information in regard to the equipment are given in plain conversational language.

Gotshall, W. C. Notes on electric railway economics and preliminary engineering. Ed. 2. 1904. McGraw, $2. 621.36—G7

Discusses the commercial and engineering features affecting the location, equipment and successful operation of interurban electric railways. There are valuable chapters on estimating probable passenger and freight traffic, and on the third rail vs. trolleys.

The appendix contains specifications for a road between New York and Port Chester.

Gutmann, Ludwig. Motorman and his duties. Ed. 5, rev. and enl. 1903. Windsor, Chicago, $1. 621.36—G9

Pt. 1 treats of the practical work of a motorman; pt. 2 describes and explains the apparatus in detail.

Hedges, K. American electric street railways. 1894. Spon, $5. 621.36—H3

Descriptive matter and statistics of interest to students of early progress.

Herrick, A. B. Practical electric railway handbook. Ed. 2, rev. 1906. McGraw, $3. K621.36—H4A

Valuable data and concise information on the following: Testing, track, power station, line, car house, repair shops, equipment, operation, storage batteries and boosters, underground conduits.

Houston, E. J., and **Kennelly,** A. E. Electric street railways. 1896. Electrical World, $1. 621.36—H8

A good explanation for general readers.

International Correspondence Schools. Text-book on Electric lighting and railways. 4 v. c1901. Internat. Text-Book Co., Scranton, $5. each. K621.36—I 61EA

The text-books for their regular course. Clearly written and practical.

v. 1. Mathematics, dynamos and motors.
v. 2. Alternating currents, electric transmission.
v. 3. Electric lighting, interior wiring.
v. 4. Electric railway.

—— Treatise on electric street car running. 2 v. 1901. Internat. Text-Book Co., Scranton, $5. each. K621.36—I 61

These are their regular text-books, and treat the subject very thoroughly, including principles of the motor, car equipment, heating and lighting, instructions on the care and operation of the equipment, with a long section on brakes.

Livermore, V. B., and **Williams,** James. How to become a competent motorman. 1903. Van Nostrand, $1. 621.36—L7

A handbook of practical instructions on operating electric car equipment, with rules for many emergencies.

Trevert, Edward. Electric railway engineering. 1892. Bubier, $2. 621.36—T7

A popular description of apparatus and methods in 1892.

ELECTRIC LIGHTING AND HEATING.

Alglave, Emile, and **Boulard,** J. Electric light. 1884. Appleton, $5. 621.37—A39

A comprehensive popular record of the early development of electric lighting, with fine cuts of historical apparatus.

Allsop, F. C. Practical electric light fitting. n. d. Macmillan, $1.50 621.37—A44

The details relate chiefly to English practice and are rather out of date, but there are some helpful suggestions on general working principles.

Atkinson, Philip. Elements of electric lighting. Ed. 9. 1897. Van Nostrand, $1.50 621.37—A87

One of the best books on the subject for non-professional readers.

Bell, Louis. The art of illumination. 1902. McGraw, $2.50 621.37—B4

How to produce economically the most pleasing and effective results in interior and outdoor lighting, based on a careful study of the underlying optical and aesthetic principles and on the characteristics of various illuminants.

Crocker, F. B. Electric lighting. 2 v. 1901-1904. Van Nostrand, $3. each. 621.37—C8

A standard comprehensive work.
v. 1. Generating plant. (ed. 6, 1904.)
v. 2. Distributing system and lamps. (1901. Has not been rev. since.)

Cunynghame, Henry. Treatise on the law of electric lighting. 1883. Stevens, London, $5. 621.37—C9

Contains the (English) Electric Lighting Act of 1882 and certain statutes incorporated with it, followed by a description of electric lighting apparatus then in use. Out of print.

Dredge, James, editor. Electric illumination. 2 v. Pref. 1882-1885. Wiley, $25. K621.37—D6

Valuable for historical study. It describes and illustrates most of the generators and lamps invented to the year 1884, and contains abstracts of all English patents in any way bearing upon electric lighting from 1837-1882, with a list of American patents, 1852-1882.

Edison Electric Light Co. Patent suits: legal decisions. The Company, New York City. P621.37—v. 1

A collection of over 30 pamphlets containing the texts of decisions handed down during the years 1886-1896.

Gordon, Mrs. J. E. H. Decorative electricity. 1891. Low, $3.75 621.37—G6

Suggestive talks on how to combine artistic effects with convenience, in lighting houses by electricity. Out of print.

Gordon, J. E. H. Practical treatise on electric lighting. 1891. Appleton, $4.50 621.37—G65

A survey of apparatus and methods reliable at the date of publication, with excellent illustrations. Out of print.

Houston, E. J., and **Kennelly,** A. E. Electric arc lighting. Ed. 2. 1902. Electrical World, $1. 621.37—H8A

For non-professional readers. Explains clearly the principles and mechanism of arc lamps and the systems of operating them. Chapters on Enclosed arc lamps, Series arc lighting from continuous current transformers, Multi-circuit arc light generators, and Photography by the arc light have been added to this edition.

—— Electric incandescent lighting. Ed. 2, enl. c1902. Electrical World, $1. 621.37—H8E

A popular explanation, treating the incandescent lamp and systems of distribution quite fully, but containing little on generating apparatus. Short chapers on 240 volt lamps, the Nernst lamp, vacuum-tube lighting, photometry, and lighting of railroad trains have been added to this edition.

Merrill, E. A. Electric lighting specifications. Ed. 2. 1896. Electrical World, $1.50 K621.37—M5

Not intended to supply technical data, but to aid competent engineers to draw up their specifications in a form that will cover all essentials and avoid ambiguity.

Sawyer, W. E. Electric lighting by incandescence. Ed. 4. 1887. Van Nostrand, $2.50 **621.37—S27**

A nearly impartial description of his own system and those of Edison, Maxim and other pioneers. Out of print.

Schneider, N. H. (Norrie, H. S.) Electric gas lighting; how to install (and repair) electric gas igniting apparatus, including the jump spark and multiple systems. 1901. Spon, 50c. **621.37—S35**

Slingo, W., and **Brooker,** A. Electrical engineering for electric light artisans and students. New and rev. ed. 1895. Longmans, $3.50 **621.37—S63**

The apparatus and methods are from English practice. The book is useful for a clear, non-mathematical presentation of the principles of electrical engineering.

Urquhart, J. W. Electric light. Ed. 5, rev. and enl. 1893. Lockwood, 7s. 6d. **621.37—U79**

A well known book, chiefly useful now for a good plainly written account of early machines and apparatus, with illustrations.

—— Electric light fitting. Ed. 3, rev. and enl. 1898. Van Nostrand, $2. **621.37—U79E**

A practical handbook on the management of electric lighting apparatus and on methods of wiring, including ship wiring.

Whipple, F. H. Municipal lighting. 1888. Detroit, $1. **621.37—W5**

Of historical value for the authentic data it contains on conditions and prices in many cities throughout the U. S. Out of print.

Houston, E. J., and **Kennelly,** A. E. Electric heating. 1895. Electrical World, $1. **621.375—H8**

A popular explanation of the heating of bare and covered conductors, the use of fuses, electric heaters, electric cooking, electric welding, and electric furnaces.

TELEGRAPH.

Davis, Daniel, Jr. Book of the telegraph. 1851. Davis, Boston. **621.391—D2**

A short history and description of the telegraph, bound with the catalogue of electrical apparatus of which he was the maker. Out of print.

Fahie, J. J. History of electric telegraphy to the year 1837. 1884. Houghton, $3. **621.391—F1**

A record of what had been attempted and accomplished before Morse made the telegraph a commercial fact.

Field, H. M. History of the Atlantic telegraph. 1866. Scribner, $1.50 **621.391—F4**

A most interesting record of the difficulties and discouragements met with and of the final triumph of the enterprise.

Hoskiær, V. Guide for the electric testing of telegraph cables. Ed. 3. 1889. Spon, $1.50 **621.391—H7**

A short handbook of methods, with diagrams of connections.

Houston, E. J., and **Kennelly,** A. E. Electric telegraph. 1897. Electrical World, $1. **621.391—H8**

For general readers. The subject is well covered, with the exception of wireless telegraphy.

International Correspondence Schools. Telegraphy. 2 v. c1901. (International library of technology, v. 23-24.) Internat. Text-Book Co., Scranton, $5. each. **K621.391—I 61**

The material of their regular course arranged for reference use. Clearly written and intensely practical.
v. 1. General principles and apparatus, pole lines, cables, conduits.
v. 2. Various systems of telegraphy, including 100 pages on the quadruplex. Many diagrams of connections and other illustrations.

Jones, W. H. Pocket edition of diagrams and complete information for telegraph engineers and students. c1904. Telegraph Age, $1.50 **621.391—J73**

A practical manual describing the apparatus and circuits used in telegraphy. 160 diagrams.

Lockwood, T. D. Electricity, magnetism and electric telegraphy. 1883. Van Nostrand, $2.50 **621.391—L8**

Rather out of date, but clearly written. The information is given in "catechism" form.

Maver, William, Jr. American telegraphy and encyclopedia of the telegraph. Ed. 5. 1903. Maver Pub. Co., $5. **K621.391—M4**

Truly encyclopedic in scope, and reliable. Besides various phases of telegraphy proper, it includes wireless telegraphy, simultaneous telegraphy and telephony, military signaling, burglar and fire alarms, railway block signals, etc. Concludes with brief specifications and data for estimates.

—— and **Davis,** M. M. The quadruplex; with chapters on telegraph repeaters and the Wheatstone automatic telegraph. 1885. Telegraph Age, $1.50 **621.391—M4Q**

A clear explanation, with many diagrams.

New York (City), Atlantic and Pacific Telegraph Co. To business men, capitalists, and all seeking investments; telegraphic revelations. 1868. **621.391—N56**

A pamphlet inviting investment in the company's stock, and of historical interest for its statistics of the telegraph and of several early companies.

Pope, F. L. Modern practice of the electric telegraph; a technical handbook for electricians, managers and operators. Ed. 17. 1902. Van Nostrand, $1.50 **621.391—P8**

A well known handbook. This edition, however, is practically reprinted from the 14th edition, 1891.

Preece, W. H., and **Sivewright,** J. Telegraphy. Ed. 5. 1884. Longmans, 6s. **621.391—P9**

An outline of English practice at about 1880, of historical interest for illustrations of apparatus and details of method.

Prescott, G. B. Electricity and the electric telegraph. Ed. 5. 1882. Appleton, $7. **621.391—P92**

There are over 600 pages, with very many cuts, describing telegraph instruments and practice up to the year 1877.

Russell, W. H. Atlantic telegraph. 1865. Day, London. **621.391—R9**

A popular account of the laying of the cables of 1858 and 1865, with many contemporary details. Written just before the laying of the successful cable in 1866. Colored plates. Out of print.

Sabine, Robert. History and progress of the electric telegraph. Ed. 2. 1869. Van Nostrand, $1.25. **621.391—S11**

Chiefly a description of the instruments and methods in use at that time.

Wireless Telegraphy.

Collins, A. F. Wireless telegraphy. 1905. McGraw, $3. **621.393—C69**

The plan of this book brings together all forms of each type of apparatus, but does not give a complete description in one place of any of the systems of wireless telegraphy. Contains many illustrations of apparatus and a short chapter on wireless telephony.

Fahie, J. J. History of wireless telegraphy, 1838-1899. 1900. Dodd, $2. **621.393—F1**

Contains a record of early experimental work leading up to the discovery of practical methods, and describes the systems of Preece, Smith, and Marconi. An appendix contains a full reprint of Marconi's patent.

Kerr, Richard. Wireless telegraphy popularly explained. 1898. Scribner, 75c. **621.393—K4**

A simple and reliable explanation, with descriptions of early experiments.

Lodge, Sir O. J. Signalling through space without wires. Ed. 3, enl. 1900. Van Nostrand, $2. **621.393—L8**

A lecture on the work of Hertz in producing and detecting electric waves, followed by appendices on the application of these discoveries in telegraphy, on the history of the coherer, and on photoelectric phenomena.

Maver, William, Jr. Maver's wireless telegraphy. 1904. Maver Pub. Co., $2. **621.393—M4**

Covers the whole field very completely and concisely, and has an excellent index for reference purposes. There are many diagrams illustrating the various systems and circuits.

Sewall, C. H. Wireless telegraphy. 1903. Van Nostrand, $2. **621.393—S51**

Pt. 1. Introductory and descriptive; pt. 2. Inventors and inventions; pt. 3. Comparative merits and prospects of telegraphy with and without wires; pt. 4. Apparatus. The appendix contains certain patent specifications. Considerable space in pt. 1 is given to the work of Tesla.

Tunzelmann, G. W. von. Wireless telegraphy; a popular exposition. Ed. 2. 1902. Scribner, 75c. **621.393—T8**

Gives the physical facts upon which it is based, describes some of the early experiments which led to a conception of the possibility of wireless telegraphy and outlines Marconi's system in some detail.

TELEPHONE.

Abbott, A. V. Telephony; a manual of the design, construction and operation of telephone exchanges. 6 v. 1903-1905. McGraw, $1.50 each. **621.395—A13**

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Allsop, F. C. Telephones; their construction and fitting. Ed. 3. 1895. Spon, $1.25 **621.395—A44**

The apparatus described is chiefly English and shows many variations from current American practice. The larger questions of telephone engineering are not discussed.

Bennett, A. R. Telephone systems of the continent of Europe. 1895. Longmans, $4.50 **621.395—B4**

Facts are given, so far as obtainable, for 26 countries, under the following heads: History and present position, services rendered to the public, tariffs, way-leaves, switching arrangements, hours of service, subscribers' instruments, outside work, payment of workmen and operators, statistics.

Dobbs, A. E. Practical features of telephone work. 1899. Electrical World, 75c. 621.395—D6

Suggestions and cautions for the inexperienced on many details of practice.

Homans, J. E. A B C of the telephone. 1901. Audel, N. Y., $1. 621.395—H75

Intended to aid the less experienced practical worker as well as to give a popular account of the subject.

Hopkins, W. J. Telephone lines and their properties. 1893. Longmans, $1.50 621.395—H7

A non-mathematical discussion of their design, construction and electrical properties, including a chapter on disturbances from outside sources.

Houston, E. J., and **Kennelly,** A. E. Electric telephone. Ed. 2, enl. c1902. Electrical World, $1. 621.395—H8A

For general readers.

International Correspondence Schools. Telephony. c1902. (International library of technology, v. 25.) Internat. Text-Book Co., Scranton, Pa., $5. K621.395—I 61T

This is substantially a reprint of vol. 2 of the text-book noted next.

—— Treatise on telephony. 4 v. 1900. Internat. Text-Book Co., Scranton, $5. each. K621.395—I 61

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Miller, K. B. American telephone practice. Ed. 4, enl. 1905. McGraw, $4. K621.395—M6A

A practical, comprehensive treatise on the apparatus used, and on the methods of construction and operation of telephone systems. Much enlarged and improved over previous editions.

Preece, W. H., and **Maier,** Julius. Telephone. 1889. Whittaker, $3.50 621.395—P92

A standard work during the years immediately following its publication.

Prescott, G. B. Bell's electric speaking telephone; its invention, construction, application, modification and history. 1884. Appleton, $6. 621.395—P93

Of value for its illustrations and descriptions of early forms of telephone apparatus.

The claims of various inventors are considered at some length.

Webb, H. L. Telephone hand-book. 1894. Van Nostrand, $1. 621.395—W3

A well known practical manual. Much of the apparatus is no longer in general use, but many of the working methods and suggestions apply to present practice.

ELECTRIC BELLS.

Allsop, F. C. Electric bell construction. 1895. Spon, $1.25 621.398—A44

Describes and illustrates the apparatus used in electric-bell work, but does not describe methods of wiring and fitting up.

Bottone, S. R. Electric bells and all about them. Ed. 4. 1892. Van Nostrand, 50c. 621.398—B6

ELECTROCHEMISTRY AND ELECTROMETALLURGY.

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Borchers, W. Electric smelting and refining. Ed. 2. 1904. Lippincott, $7. 621.38—B6

A comprehensive and authoritative treatise on the extraction and treatment of metals by the electric current.

Fontaine, Hippolyte. Electrolysis. 1885. Spon, $1.80 621.38—F7

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Goodwin, H. M. Fundamental laws of electrolytic conduction. 1899. Amer. Book Co., 75c. 621.38—G6

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Gore, George. Art of electro-metallurgy. Ed. 2. 1884. Longmans, $2. 621.38—G65

Contains a historical sketch, an outline of practice in 1883, with many references to periodicals, a bibliography covering 1841-1883, and a list of patents, 1836-1883. The practical part is still of value.

Hawkins, H. J. Polishing and plating of metals. 1904. Hazlitt, $2. 621.38—H3

Written from the standpoint of the practical electroplater, and free from obsolete apparatus and methods.

Langbein, Georg. Complete treatise on the electro-deposition of metals. Ed. 5. 1905. Baird, $4. **K621.38—L2**

Gives a good summary of the underlying electrical and chemical principles and treats in detail modern electro-plating and electrotyping processes and equipment.

Lüpke, Robert. The elements of electrochemistry, treated experimentally; 2d Eng. edition translated from the 4th German edition by M. M. P. Muir. 1903. Lippincott, $2.50 **K621.38—L96**

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Wahl, W. H. Galvanoplastic manipulations. 1883. Baird, $6. **621.38—W1**

A practical guide for the electroplater and electrotyper. Gold and silver plating are treated with special fulness. A list of English and American patents is given. Out of print.

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A standard comprehensive treatise. The greater part deals with the working processes of electroplating and electrotyping, and is still very useful. There is a bibliography.

—— Electro-plating and electro-refining of metals; a new ed. of his Electro-deposition, rev. by Philip. 1902. Van Nostrand, $4.50 **621.38—W3E**

The part of the book dealing with electro-plating processes is practically unchanged, but the early chapters on equipment are thoroughly revised. Pt. II, on electrolytic refining, is the work of the editor and is especially valuable for its careful study of costs. Concludes with a chapter on electro-galvanising.

Wright, J. Electric furnaces and their industrial applications. 1905. Henley, $3. **621.38—W9**

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Barnard, Charles. First steps in electricity. 1898. Maynard, 60c. **621.308—B2**

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